

**Methods** We compared 515 male pathological gamblers from inpatient treatment units with 269 matched controls. Patients were diagnosed by experienced clinicians. In a random sample of 58 patients clinical diagnoses were validated through SKID 1 interviews [1].

**Results** 88% had a comorbid diagnosis of substance dependence (nicotine dependence 80%, alcohol dependence 28%). Only 1% of the gamblers had an impulse control disorder diagnosis. Compared with controls first degree relatives were more likely to suffer from alcohol dependence (27.0% vs. 7.4%), PG (8.3% vs. 0.7%) and suicide attempts (2.7% vs. 0.4%).

**Conclusions** In addition to recent papers on the neurobiology (Fauth-Bühler et al., 2016) and genetics of gambling [2,3], our findings support the classification of PG as behavioural addiction in the ICD-11 [4].

**Disclosure of interest** The authors have not supplied their declaration of competing interest.

#### Reference

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#### S061

### Neurobiological mechanisms of problem gambling and treatment

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**Background and aims** In the past decade, neurobiological research on pathological gambling has flourished. Based on neurobiological similarities between pathological gambling and substance use disorders and similarities in genetics, diagnostic criteria, and effective treatments, pathological gambling was the first behavioral addiction to be included in the DSM-5 within the revised category Substance-related and addictive disorders.

In this presentation novel findings from gambling research in our research group focusing on the role of impulsivity, anticipation towards monetary outcomes, and the interaction between stress and cue reactivity will be presented, with a focus on new functional MRI results. An overview will be given on the concepts of impulsivity and compulsivity in pathological gambling and relevant neurocognitive and neuroimaging findings. Implications of neurobiological research for novel intervention research, such as in neuromodulation studies and personalized medicine will be highlighted.

**Keywords** pathological gambling; gambling disorder; impulsivity; compulsivity; neuroimaging; craving

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#### S062

### Internet addiction and the virtual self-image

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**Background** Internet gaming disorder appears to be associated with self-concept deficits and increased identification with one's avatar. For increased social network use, the few existing studies suggest striatal-related positive social feedback as an underlying factor. Furthermore, few study findings indicate that internet addicts generally have problems in emotional inhibitory control processing.

**Methods** Pathological and addicted internet gamers as well as social network users were compared with healthy controls regarding psychometric and neurobiological measures of self-concept-related characteristics, avatar identification and emotional inhibitory control processing.

**Results and conclusion** Psychometric results indicated that both subgroups showed higher self-concept deficits compared to healthy controls. Neurobiologically, different brain activation patterns were observed in the subgroups during self-knowledge retrieval and inhibition of emotional stimuli. Furthermore, addicted internet gamers showed a higher identification with the own avatar, mirrored in an increased left angular gyrus activation, a region functionally associated with identification processing and feelings of empathy.

These findings provide a starting point for the deduction of specific psychotherapeutic treatment approaches for addicted internet gamers and social network users.

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#### S063

### Mobile phone addiction: Evidence from empirical research

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**Introduction** Recent technological innovations have led to a proliferation of mobile and smartphones, which have become the cornerstone of modern societies in the 21<sup>st</sup> Century in terms of communication, notifications and entertainment. Latest research however suggests that with the advantages offered by mobile technologies, smartphone use today may have a significant impact on mental health and well being. Overuse has been associated with stress, anxiety, depression and addiction.

**Objectives** This talk aims to highlight results of current mobile phone addiction research.

**Aims** To replicate and extend earlier research with regards to psychopathology (depression, anxiety and stress), mobile phone use and age on problematic mobile phone use and addiction.

**Methods** Individuals aged 16 and above participated in an online study that contained a pool of validated psychometric measures. Data were analyzed using Structural Equation Modeling.

**Results** Calls per day, time spent on the phone and using social media significantly predicted prohibited and dependent mobile phone use, whereas stress predicted dependent use only. Anxiety and depression did not significantly predict problematic mobile phone use. Findings also revealed that problematic mobile phone use is prevalent across all ages and both genders.

**Conclusions** The current results have implications for addiction to using mobile phones, and suggest teachers, parents and affected individuals may benefit from awareness and prevention efforts, respectively.

This talk is based on Kuss, D.J. et al. (2016). Problematic mobile phone use and addiction: The roles of psychopathology, mobile phone use and age. Under review, and was funded by the British Academy and NTU.

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## Symposium: Early detection and early intervention for psychosis—the European status and perspectives

S064

### The current European status

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In the last two decades, both early detection (ED) and early intervention (EI) programs and services have gradually become important and innovative components of contemporary mental health care. However, it is unclear whether ED/EI programs have consistently been implemented throughout Europe.

Here, we report results of the EPA Survey on ED/EI Programs in Europe in 2016.

A 16 item questionnaire was sent to representatives (presidents and secretariats) of 40 EPA National Societies/Associations (NPAs), representing 37 countries. The representatives were also invited to recommend a person for additional information about ED/EI services/programs in the country.

The response rate was 59.4% (22 NPAs). Fifteen out of 28 NPAs were from developed, and 7 out of 8 from economies in transition. ED/EI services have been implemented in 54.5% of the included countries, mean duration  $10.0 \pm 4.9$  yrs. Mostly, neither ED were separated from EI, not the adults from adolescents. National plans to develop ED/EI were reported in four countries. Although national guidelines for schizophrenia exist in most of the countries (73.9%), specific chapters focusing on ED/EI and/or at-risk mental states were not included in the majority of them. Duration of untreated psychosis was unknown in 63.6%. In those who gave the estimation it was 12–100 weeks (median in weeks: 33 developed economies; 44 economies in transition).

The fields of ED/EI have been unequally developed across Europe. Still, many NPAs are without the development plans. EPA and its Sections should address the identified gaps and suggest how to harmonize services for the full range of assessments and interventions.

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S065

### Diagnostic procedures for prediction of psychosis - Achievements and challenges

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Individualized prognostic predictions in people at clinical high risk are crucial to tailor suitable interventions and personalized prevention. Furthermore, in recent years, the synergy between fast-pace technical sophistication in neuroscience (e.g. neuroimaging and neurophysiological) and novel bio-statistical tools (e.g. machine learning algorithms) has accelerated the development of more inclusive predictive models and magnified the potential for such individualized risk stratification enriching classical psychopathological tools. However, the clinical translation of such research insights is still circumscribed and, despite incremental optimization of assessment tools, increasingly accepted criteria to characterize at risk mental states and tumultuous advance in the field, the prediction of psychosis at such individual level remains a not fully accomplished target.

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S066

### Intervention in clinical high risk states - Current status and future perspectives

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*Introduction* During the last twenty years, international efforts advanced the prevention of psychosis considerably. However, improved predictions as well as well-tolerated and needs-tailored interventions are still required.

*Objectives* Prediction and Prevention of Psychosis

*Aims* Presenting the current state and new developments, including the European Union funded multi-center project PRONIA with regard to prediction ([www.pronia.eu](http://www.pronia.eu), 7<sup>th</sup> Framework Programme grant agreement n° 602152) and the German multi-center trial ESPRIT funded by the Federal Ministry of Education and Research (BMBF grants 01EE1407C and 01EE1407I) with regard to prevention.

*Methods* Results of meta-analyses will be presented and discussed with regard to achievements and challenges. Possible advances by current projects will be discussed.

*Results* Pharmacological as well as psychological prevention has been shown to reduce the incidence rate of psychosis in the respective samples considerably. However, particularly social and role functioning, which are prognostically most important, are still an unsolved challenge. Furthermore, new interventions providing an improved tolerability and acceptance by the patients are required. On the level of prediction, a further improvement of predictive validity, particularly with regard to individualized risk estimation is desired.

*Conclusions* The achievements in the field of prevention of psychosis are impressive, but further progress is needed. This should be achieved by studies like PRONIA, which aims at improving risk estimation by an advanced assessment concept as well as a sophisticated data analysis, and ESPRIT, which compares the effects of N-Acetylcysteine with an innovative, modular psychological

